The U.S. Physician Supply: Generalism in Retreat

STEVEN A. SCHROEDER, M.D.*

For every generalist physician "made" in America, on average, more than two specialist physicians are "made." As a result, the nation is awash in cardiologists, gastroenterologists, and anesthesiologists, but it lacks a supply of family practice physicians, general internists, and general pediatricians central to providing basic primary care to its citizens.

Our inner cities suffer the most from this paucity of generalist physicians. In Harlem, Watts, North Philadelphia, and the South Side of Chicago, men, women, and children may go year after year without seeking, or receiving, primary care. Here, in the shadows of academic medical centers, lies a population that lacks even the most basic health care. Young mothers on Medicaid cannot find pediatricians for their sick children. Chronically ill adults routinely receive episodic care at hospital emergency rooms. and the children go without well-child care because the primary care physicians are beyond their geographic and financial reach.

Today, as the U.S. is in the throes of health care reform, this study in contrasts is lost on few: the medically needy without access to primary care sit side-by-side with our academic medical centers, the "factories" that have geared their operations to producing specialist and subspecialist physicians. In this commentary I explore the scope of the U.S. generalist physician shortage, the factors that drive it, the ramifications for our health care system, and some potential solutions.

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* Dr. Schroeder is President of The Robert Wood Johnson Foundation, P.O. Box 2316, Princeton, NJ 08543-2316.

The U.S. Generalist Physician: An Endangered Species?

Despite the predictions of a pending physician glut in a 1980 report by the Graduate Medical Education National Advisory Committee, health care experts generally agree that the overall physician supply in the U.S. is currently approaching equilibrium at 255 practicing physicians per 100,000 persons.[1] In fact, the U.S. ratio ranks just below the median among other developed nations. Italy, Germany, Belgium, France, and the Scandinavian countries have more physicians per capita than the U.S., whereas Canada, Australia, New Zealand, and the United Kingdom have less.[2] In all these other countries at least 50% (and often closer to 70%) of practicing physicians are generalists. However, in the U.S. it is in this division between generalist and specialist physicians that the ratios are seriously out of line. The proportion of generalist physicians in the United States is currently less than 30% and continues to decline.[3] Left unchecked, less than one quarter of U.S. practicing physicians will function as generalists by the beginning of the next century.[4] Indeed, in this scenario, the generalist may well be an endangered species.

Trends among recent U.S. medical school students paint an even bleaker picture for the nation. Based on responses to an Association of American Medical Colleges questionnaire, less than 15% of the graduating classes of 1991 and 1992 anticipate pursuing a generalist career.[5] During the past decade, the percentage of senior medical students indicating a preference for the primary care specialties of family practice, general internal medicine, or general pediatrics declined by more than 50%. General internal medicine experienced the biggest decline of the three during the 10-year period; student interest dropped by 77%.[6] National residency match statistics reflect this trend. Between 1986 and 1993 the number of medical students placed in internal medicine residency positions dropped by nearly 30% from 4067 to 2899.[7]

Unfortunately, as foreboding as these figures are, the reality itself may be even more portentous. Why? Because about 60% of

general internal medicine residents are eventually lost to a subspecialty such as cardiology or gastroenterology.[8]

Managed care plans, large group practices, and other major "consumers" of primary care physicians convened at a recent Robert Wood Johnson Foundation Generalist Physician Conference expressed concern about another trend evident among general internists working within their organizations. Although it goes without saying that these organizations all experience primary care physician recruitment difficulties, many indicated that they are also plagued with retention problems specific to general internists. It seems that the "seven-year itch" is common among general internal medicine physicians. Many of these practitioners opt out of full-time practice after 6 to 8 years, disregarding additional financial incentives, to pursue more "interesting" avenues such as teaching or management. The consensus among these executives is that the general internists become bored with their medical practice and look to activities other than clinical practice for intellectual stimulation and professional fulfillment. Conference participants report that pediatricians and family practice physicians employed by their organizations also exhibit dissatisfaction after several years in practice, but they believe it is due to the volume of paperwork and income discrepancy (versus the specialists) rather than the nature of the practice itself. (Discussion with health care executives at Robert Wood Johnson Foundation Generalist Physician Conference, Boston, MA, May 21, 1993)

The results of a physician survey conducted by The Robert Wood Johnson Foundation support the finding of a discontent among primary care physicians that grows in relation to the number of years in practice. Clinically active physicians under the age of 40 who had been out of residency training between 2 and 5 years were asked the question: "Given what you know about medicine as a career, if you were in college today, would you go to medical school?" Primary care physicians practicing for a longer period of time were more likely to be dissatisfied than their younger counterparts.[9]

The Specialist Glut—Is It Really a Problem?

The statistics speak loudly. America has produced and continues to produce more specialty physicians per capita than any other nation on earth. Is this a problem? If you were a patient scheduling elective surgery, you would probably answer "no." In this country, because of the high proportion of specialists, queuing for elective surgery for those who have the capacity to pay is virtually unknown. But there is a downside to a specialty-dominated system that has implications for access, quality, and cost.

Although most Americans may have no difficulty finding an orthopedic surgeon for a hip replacement procedure or a cardiologist for angiography, many persons in rural areas or inner cities don't have access to a primary care physician and either go without care or use hospital emergency rooms as walk-in clinics. As a result, opportunities to provide cost-effective preventive care are lost, and expensive, inefficient, episodic hospital-based care is routinely substituted for continuous, office-based primary care.

Specialists, themselves, are aware of another drawback to a specialty-dominated health care system. Competition for patients is keen. Americans simply don't have enough health problems to keep all our specialist physicians occupied on a full-time basis. Specialist physicians respond in two ways:

1. They increase the intensity of their practice style. More tests and more procedures are the norm. For example, from 1978 to 1987, the number of coronary artery bypass surgeries performed per million citizens increased by more than 200% from 483 to 1373, far more than any other country.[10,11] Recent studies suggest that 20% to 50% of commonly performed procedures in the U.S. (coronary artery bypass surgery among them) could be avoided without any deleterious health effects.[12] Our tremendous technologic capacity drives utilization more than actual morbidity.
2. They resort to functioning as part-time generalists to augment their practice income. Because specialists tend to practice a more expensive brand of medicine, they add costs to the system. In addition, health care experts have raised some quality

flags about specialist physicians acting in the capacity of generalists. The intensity of their practice style may in fact be dissatisfying to patients who require only basic primary care and may even result in increased numbers of iatrogenic injuries and medical mishaps. Moreover, if specialists routinely function outside of their area of expertise, they may dull their competency and technical skills.

The Clinton Administration continues to finetune its health care plan for the nation, and it is widely believed that managed care will play a prominent role. What does this portend for a health care system weighted down by specialists and subspecialists? The demand for primary care physicians will only increase. At the heart of managed care lies utilization control: the science of matching the level of service provided to the health care need presented. Any such system relies heavily on generalist physicians for this task. If the Clinton health care plan in its ultimate form combines both universal coverage and managed care, the nation will need to be assured of a steady supply of generalist physicians to care for the additional 37 million individuals who will join the ranks of the insured.

The Generalism Malaise: What Are Its Roots?

Unlike other developed countries that have some type of master plan in place to manage the growth of their physician work force, the U.S. has allowed individual medical students, the 126 medical schools, and teaching hospitals (in conjunction with the Accreditation Council on Graduate Medical Education and the American Board of Medical Specialties) to determine both the number and types of physicians produced in the nation. The United Kingdom, in comparison, controls specialty growth through a central government body. The Netherlands uses a more indirect approach, but the results are the same; only a limited number of physicians in each specialty are eligible for reimbursement by third party payers.[3] America's passive approach to physician work force planning has resulted in a health care system dominated by specialists. What influences are at work in the U.S. health care system that encourage the practice of specialty medicine at the expense of generalism? Unfor-

tunately, there are many—in both the training environment and the practice environment.

Factors in the Training Environment That Favor Specialty Medicine

The medical school experience has a significant influence on students' career choices. And it is without question that U.S. medical academia, the medical schools and their associated teaching hospitals, is strongly biased toward specialists and specialty practice. One can fault the medical schools for not taking it on themselves to broaden their mission to include the basic health care needs of the very population that lies at their doorstep and fills their emergency rooms, and for failing to emphasize in their curriculum the vital role primary care plays in meeting these needs. Yet, in a large measure, medical schools have only responded to market signals: the division in this country between public health and medicine; the American public's fascination with the most sophisticated and high tech of care (not to mention the expectation that medicine can counteract whatever toll unhealthy lifestyles have taken); and a reimbursement system that favors the procedural over the preventive and technology over time spent with the patient.

Nonetheless, there are several quiet influences, and some not so quiet, in the medical school and residency environment that champion specialty care.

The urban, high-tech hospital setting in which most medical students' training takes place colors their career aspirations. Almost daily they witness the excitement and challenge of fast-paced, tertiary medicine, whereas their contact with primary care is much more intermittent and mundane. The time allotted to primary care clerkships is so limited that students may never truly recognize or understand the personal fulfillment of community-based practitioners providing ongoing care to a distinct patient population. Moreover, internal medicine clerkships are often confined to the world of the tertiary care hospital; thus, students view primary care through this prism, with its emphasis on intensive care units, last-ditch efforts for the terminally ill, and brief diagnostic admissions.

Students who have an opportunity to experience internal medicine in the ambulatory setting find it more attractive.[13]

Medical school professors who are the proselytizers of the profession and the most visible role models for students are typically specialists. Their influence on medical students' specialty choices may have less to do with what they actually say and more to do with what they don't say (very little about primary care) and what they symbolize (respect, stature, prestige, and visibility). In the students' minds, specialty medicine becomes equated with these positive attributes, while generalism is left largely undefined or defined only through haphazard contact with less visible, less prestigious practitioners outside of the academic circle.

A letter to the editor in *The New England Journal of Medicine* from a general internist eloquently articulates the current state of medical education:

> The careful practice of internal medicine and other primary care disciplines involves enormous patience, a willingness to listen intently, and the ability to respond to a wide array of chronic and acute illnesses ever an extended period. Students and house staff rarely have the chance to participate meaningfully in this process. Instead, they are immediately charmed by the flash and dash of high tech interventions—excitement, quick answers, big payoffs.[14]

Medicine's knowledge base continues to expand. New technologies are developed, disease-specific breakthroughs are made, and our pharmacopeia broadens. Consequently, medical students perceive the domain of the generalist as continually growing and are uncomfortable with this notion. In contrast, the specialist is accountable for only a subset of this knowledge base.[13] In fact, several office-based primary care practitioners at sites involved in The Robert Wood Johnson Foundation grant programs have commented to this effect. Aspiring young primary care physicians fresh out of their residencies arrive to explore the practice opportunities in a small community setting and leave daunted by the thought of prac-

ticing medicine without on-site specialist backup and the medical technology to which they are accustomed.

Preliminary data from a study by the Association of American Medical Colleges support the hypothesis that the culture and curriculum of the medical school have a significant impact on students' specialty choices.[15] Medical schools were classified as high or low producers of generalist physicians based on graduating students' declarations of career leanings. These responses were compared with the declarations made 4 years earlier as the students matriculated into the schools. Medical schools that were high producers of generalist physicians sustained and fostered students' enthusiasm for primary care; in the schools that were low producers of generalists, students' interest in primary care waned or even disappeared altogether during the 4-year period.

Factors in the Practice Environment That Favor Specialty Medicine

If medical students emerge from their years of training unmoved by the specialty bias and choose to pursue careers as generalist physicians, there are several factors in the practice environment that may subsequently serve to dull their enthusiasm for primary care.

First and foremost among these factors is the wide gulf in income levels that currently exists between generalists and specialists. Our current fee-for-service system reimburses physicians at a higher rate for performing tests and procedures than it does for providing nontechnologic care. As a result, anesthesiologists and surgeons enjoy incomes that are more than twice as high as the incomes of pediatricians and family practitioners, although the workload among the specialties (in terms of average hours worked per week and visit volume) varies little. In 1991, the net income for anesthesiologists and surgeons was $221,000 and $233,800, respectively, whereas pediatricians earned on average $119,300 and family practice physicians earned $111,500.[16]

The average debt of indebted graduating medical students in 1992 was $55,859, and nearly 21% of students had debt in excess of

$75,000.[17] To live in some degree of comfort and to pay off a debt of $75,000, a medical student would need to earn a gross income of $145,000 5 years after medical school.[18] Medical students certainly understand the ramifications of the large debt they carry and they are aware of the income variations among the specialties. Living in a society that judges its worth by the money it earns, students absorb this knowledge and perceive, too, the not-so-subtle message sent to primary care practitioners. Although the Resource-Based Relative Value Scales has attempted to level the playing field by reimbursing physicians according to the level of resources consumed in their practice, its effectiveness is limited by its reliance on historical practice costs. Moreover, it was never the intent of Hsiao and his colleagues to use the Resource-Based Relative Values Scale as a mechanism for promoting primary care practice.

High-volume, office-based physicians have been hit the hardest by the intrusions and "hassles" of cost containment. General internists, general pediatricians, and family practice physicians feel the strain of the inordinate amount of paperwork and phone calls involved with sending a health maintenance organization (HMO)-participating patient to a specialist or other more expensive provider. In addition, many primary care physicians feel uncomfortable in the role of gatekeeper. It places them in the uncomfortable position of balancing the cost of care against the patient's needs.

Primary care physicians, the general internists, and family practitioners in particular, deal with a difficult and demanding patient population: the elderly, the chronically ill, individuals with acquired immunodeficiency disease syndrome, and the noncompliant.[13] For young physicians full of idealism and ready for the challenges of "curing" disease, the small gains of "caring" for the chronically ill may be frustrating and unrewarding. Unlike the pediatrician whose practice is brightened by the joys and more substantial gains of infant and child development, generalist physicians treating an adult, chronically ill population may feel they are doing no more than fending off death. The specialists, by comparison, have at their fingertips an ever growing body of technology and procedures that have actually increased their effectiveness as diagnosticians and

practitioners. In addition, they may prefer to refer patients with multiple, difficult, and chronic problems to general internists or family practitioners.

Altering the Specialty Mix

Increasing the prestige of generalism, encouraging a greater proportion of medical students to pursue careers as generalist physicians, and improving the practice environment for general internists, family practitioners, and general pediatricians already in practice will require aggressive action by both public and private entities on a number of fronts. Already, several organizations across the country are advocating a shift in the ratio of generalist physicians to specialist physicians in favor of more generalists. These organizations include the Accreditation Council for Graduate Medical Education, the American Academy of Family Physicians, the American College of Physicians, the American Medical Association, the American Society of Internal Medicine, the Association of American Medical Colleges, the American Society of Internal Medicine, the Association of Professors of Medicine, the Bureau of Health Professions of the Health Resources and Service Administration, the Council on Graduate Medical Education, the W.K. Kellogg Foundation, the National Council of State Legislatures, the National Governors Association, the Pew Health Professions Commission, the Robert Wood Johnson Foundation, and the U.S. Physician Payment Review Commission.[19] With these many powerful voices calling for management of the production of physicians, perhaps the time is right for the U.S., like all other developed countries, to develop a national policy on the physician work force.

Additional corrective actions must focus on both the training and the practice environment. Medical schools need to provide more visible primary care role models for students. The Robert Wood Johnson Foundation has fashioned its Generalist Physician Faculty Scholars Program to help in this regard. The program functions as a professional development grant providing 4 years of funding to outstanding primary care faculty to allow them to further their research work while maintaining their clinical and teaching competencies.

Medical schools must also do a better job of informing students of the myriad of job opportunities in primary care: within HMOs, large and small group practices, and community health centers. Although, if universal coverage and managed competition transpire, primary care career opportunities will virtually advertise themselves.

In light of the changes needed in the nation's mix of physicians, medical schools must also reevaluate their admissions criteria, revamp their curriculum to include more of an emphasis on primary care, and change the shape of their residency programs to include earlier and more frequent exposure to outpatient settings. Eighteen medical schools across the nation are currently being funded through The Robert Wood Johnson Foundation's Generalist Physician Initiative to work collaboratively with public and private agencies—including state governments, insurers, HMOs, hospitals, and community health centers—to increase the supply of generalist physicians (and make the environment more favorable to them) at each point along the training continuum from admissions and undergraduate medical education to residency training and practice entry/support.

On a broader note, academic medicine must be reminded of the public trust inherent in its educational mission. Because academic medical centers are so heavily supported by public funds, their educational curricula and programs must reflect the needs of the general population.[20] Providing the appropriate mix of physicians to care for the nation is a central part of this academic mission.

If these "kinder, gentler" actions fail to elicit needed change within medical academia, the nation may need to consider using the Medicare Graduate Medical Education (GME) payments as a financial carrot to encourage more generalist programs. (Although the teaching hospitals themselves may, indeed, see this as more of a financial stick.) Historically, the federal government has exerted very little control over the use of these funds (which are the largest source of federal funding directed to medical education). In fact, no one really knows how these monies are used. But they do represent a substantial sum of money, more than $5 billion dollars in 1992. This has increased from less than $1 billion dollars in 1984.[21,p51]

The federal government could use these funds as a potent tool for promoting medical education reforms that favor generalism. For example, in a major shift of federal policy, GME payments could be made directly to nonhospital-based primary care programs, rather than following the usual route of filtering the funds through teaching hospitals. Traditionally, the government has not directly reimbursed nonhospital primary care training sites for their GME costs.

In addition, direct and indirect GME payments could be reconfigured to favor primary care residencies. New York state leads the pack in using financial incentives to foster growth in primary care. It has already adopted regulations giving greater weight to primary care residents in the determination of inpatient payment rates.[22]

Another option for shifting the mix of generalists and specialists, although more of a push than a pull strategy, would be to limit the number of specialty residency positions. The national residency review committees for each specialty could winnow down the number of residency programs and positions based on quality to avoid intense scrutiny for federal antitrust violations. In a more sweeping move, the federal government could create an overreaching residency commission with responsibility for both geographic and specialty allocation of residency positions. Members of the commission could be drawn from medicine, government, business, education, and the general public.

As an interim strategy to boost the generalist pool, we may need to consider retooling existing specialist physicians to practice as full-time generalists. Particularly if managed competition comes to pass, this strategy represents a quick, easy, and inexpensive way to increase the pool of primary care physicians. In fact, internal medicine subspecialists, who already have some general medicine background, would probably require little more than a general refresher course to increase their level of expertise. What they do lack is the primary care mindset that "more is not necessarily better;" therefore, an attitude change will be necessary. Noninternal medicine specialists will require more intense review of the body of knowledge that pertains to general internal medicine, such as how to manage common illnesses (e.g., depression, diabetes, hypertension.)

Even if all these changes were to be adopted in the training environment and the pathway to primary care were made substantially less rocky, there remains a monumental hurdle in the practice environment that must be cleared—the immense discrepancy in the incomes of generalists and specialists. A core group of practitioners, policy makers, legislators, and academicians believe that this is the single, most important reason behind the retreat in generalism. A recent study by Hsiao et al. assessed the effects of Resource-Based Relative Value Scales on payments to practitioners and found that wide differences still exist among the specialties in net income for "comparable work."[23] In addition, they found that medicare payment levels overall were too low. The federal government and Medicare aren't the only payors whose reimbursement scale favors specialists. Other third party payors will need to share in the physician payment reform movement, too.

If we want to increase the appeal of generalism among future generations of medical students, we must first overhaul our current fee-for-service reimbursement system that overtly places a higher financial value on procedural and technologic care (and thus sends the implicit message that specialty care is the more valuable "product"). We must show aspiring, young physicians that the nation truly values primary care by reimbursing it at an equitable rate. In addition, we must find a way to decrease the administrative burden that cost containment has laid so squarely on the backs of primary care physicians; streamline the paper and telephone call trail that necessarily follows each individual managed care patient referred for more specialized care and alleviate the degree to which third parties intrude in the clinical decision-making process.

We also need to ask the difficult question, "How do mid-level practitioners fit into the primary care network?" The nation's physicians' assistants, nurse practitioners, and nurse-midwives stand ready to pick up the generalist baton. An ever-increasing body of research validates both the quality and cost-effectiveness of the care provided by these practitioners. In addition, midlevel practitioners have a good track record of entering and staying in primary care, and practicing in medically underserved areas as well. Howev-

er, if we decide that physicians' assistants, nurse practitioners, and nurse-midwives can appropriately fortify America's primary care reserves (and subsequently work to boost their ranks), we must simultaneously decrease the number of specialists in the system or this strategy will only be cost-inflating.

In seeking to revitalize primary care medicine and halt its retreat, we are talking about the need to make some very fundamental changes in how physicians are "made" and how they are paid. Fortunately, we are doing so at a very appropriate juncture when the health care system in toto is under a magnifying glass. Any reform effort would be incomplete without consideration of the appropriate mix and distribution of physicians to serve the nation's health care needs.

This is a very appropriate time to begin dealing with this issue for yet another reason—change will be a long time in coming. With the physician mix at its current level of disequilibrium and the average physician's career extending for 40 years, even if 50% of all residents were generalists by 1995, it would take until midway through the 21st century before 50% of all physicians are generalists.[24]

As mentioned earlier, New York has certainly set the pace for change.[22] We can only hope that others will take note. . .and take action.

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